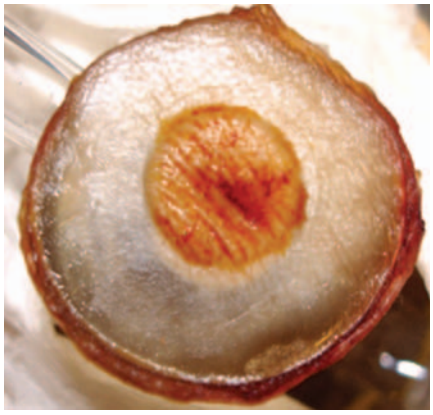
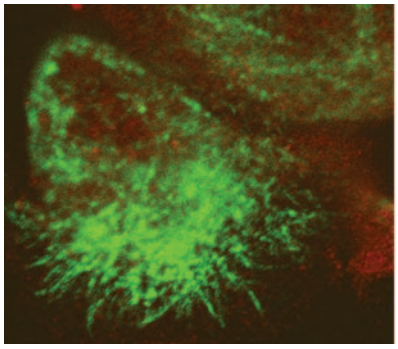
Permeating Particles



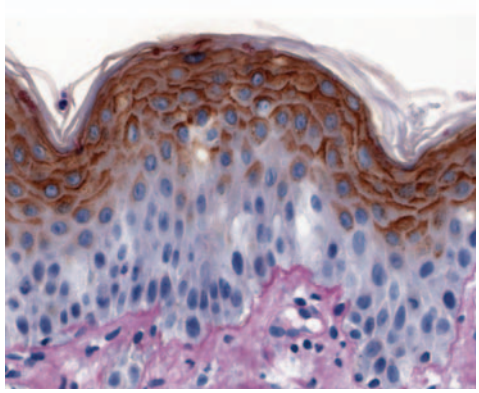
Recent literature has explored the design and production of nanoparticles for skin applications, but the possibility of accidental contamination with nanomaterials through the skin might be higher than expected. To evaluate whether metallic nanoparticles smaller than 10 nm could penetrate and eventually permeate the skin, Baroli and colleagues applied two different stabilized nanoparticle dispersions to excised human skin samples. Results showed that nanoparticles penetrated into the hair follicle and stratum corneum and, in some cases, reached the viable epidermis. The findings invite the study of potential toxicologic risks and further biomedical applications. ***See page 1701***



Stress and Psoriasis

Tagen and colleagues investigated the effect of stress and the role of corticotropin-releasing hormone (CRH) in psoriasis. They studied affected and unaffected skin of 13 psoriasis patients and skin from 4 normal controls, as well as serum CRH levels from 8 psoriasis patients and 4 controls. Expression of CRH-receptor 1 (R1) mRNA was lowest in affected samples from psoriasis patients as compared with control patients. The findings suggest that CRH and CRH-R1 may participate in the pathogenesis of psoriasis, especially when worsened by stress. ***See page 1789***

The Glue Is the Clue



The keratinocyte microparasol is a fabric of melanophagolysosomes that envelops the keratinocyte nucleus and a microtubular framework, as well as a force mechanism that pulls and holds the fabric in place. This structure protects the keratinocyte nucleus from UV-induced damage. To further define the microparasol mechanism, Byers and coworkers transfected siRNA targeted against $p150^{Glued}$, the major subunit of dynactin, into human keratinocytes. Dynactin binds dynein and is essential for the dynein motor to transport membranous cargoes over long distances along microtubules. The study findings revealed $p150^{Glued}$ plays an important role in the functional integrity of the keratinocyte microparasol. ***See page 1736***

Epidermal Barrier in Tinea Corporis

Jensen and colleagues studied the nature of skin barrier function, epidermal differentiation, and human-β-defensin-2 (hBD-2) protein expression in 10 patients with tinea corporis. β-Defensin is a peptide—part of the innate immune system. Because *Trichophyton rubrum* is the most frequent cause of tinea corporis in adults in Germany, the researchers focused on this fungal species. They concluded that superficial dermatophytosis attributable to infection with *T. rubrum* results in profoundly disturbed skin barrier function, reduced stratum corneum hydration, enhanced proliferation, and changes in epidermal differentiation, including induction of hBD-2 expression. *See page 1720*

Filaggrin and Atopics

Mutations in filaggrin (*FLG*) are strongly associated with atopic dermatitis (AD) and influence asthma accompanying AD. Morar and colleagues studied the effects by genotyping two panels of families (total, 426) containing 990 affected and unaffected children. They reported significant associations with AD, asthma, and atopy. Although the *FLG* mutations were present in 26.7% of patients with AD, they were also present in 14.4% of children without AD. This further confirms the importance of *FLG* mutations and the skin barrier in AD pathogenesis, but other genes within the epidermal differentiation complex should be investigated. *See page 1667*

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